County of Los Angeles
CHIEF EXECUTIVE OFFICE
Kenneth Hahn Hall of Administration
500 West Temple Street, Room 713, Los Angeles, California 90012
(213) 974-1101
http://ceo.lacounty.gov

WILLIAM T FUJIOKA
Chief Executive Officer

May 13, 2011

To: Mayor Michael D. Antonovich
Supervisor Gloria Molina
Supervisor Mark Ridley-Thomas
Supervisor Zev Yaroslavsky
Supervisor Don Knabe

From: William T Fujioka
Chief Executive Officer

MOTION TO WORK WITH THE COUNTY'S LEGISLATIVE ADVOCATES IN SACRAMENTO TO SUPPORT AB 591 (WIECKOWSKI) (ITEM No.3, AGENDA OF MAY 17, 2010)

Item Number 3 on the May 17, 2011 Agenda is a motion by Supervisor Ridley-Thomas directing the Chief Executive Officer to work with the County's Legislative advocates in Sacramento to support Assembly Bill 591 which would require disclosure of the types of chemicals injected underground during oil and gas extraction.

Current Law

Existing law establishes the Division of Oil, Geothermal and Gas Resources (DOGGR) within the Department of Conservation and requires the DOGGR to supervise activities related to oil and gas wells, tanks, and facilities to prevent damage to life, health, property, natural resources, and underground and surface waters suitable for irrigation or domestic purposes.

Division of Oil, Geothermal and Gas Resources is also required to collect information and prepare maps regarding oil and gas wells and the location and extent of groundwater and surface water that might be affected for irrigation or domestic purposes. Existing law requires well operators to file a written notice of intent to commence drilling with the DOGGR prior to drilling wells and only authorizes drilling

after DOGGR approves the notice of intent to begin drilling. However, current law does not require the disclosure of the types of chemicals or quantities used for "hydraulic fracturing."

According to the Assembly Committee analysis, DOGGR has the statutory authority to regulate hydraulic fracturing, but has not yet developed regulations to address the activity. DOGGR does not currently have information that indicates where and how often hydraulic fracturing occurs within the State, or the data on the safety, efficacy and necessity of hydraulic fracturing in California. In a February 16, 2011 response letter to Senator Pavley, DOGGR could not provide any detail regarding hydraulic fracturing in California "because there are neither reporting requirements nor regulatory parameters regarding the activity." In response to the Senator's question about potential risks to human or environmental health associated with hydraulic fracturing, DOGGR simply provided a link to the Environmental Protection Agency's "Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources."

Hydraulic Fracturing

According to the Western States Petroleum Association, hydraulic fracturing is one energy production technique used to obtain oil and natural gas in areas where those energy supplies are trapped in rock and sand formation. Once an oil or natural gas well is drilled and properly lined with steel casing, fluids are pumped down to an isolated portion of the well at pressures high enough to cause cracks in shale formations below the earth's surface. These cracks or fractures allow oil and natural gas to flow more freely. Often, a propping agent such as sand is pumped into the well to keep fractures open.

According to the Assembly Committee analysis, in many instances the fluids used in hydraulic fracturing are water-based. However, some formations are not fractured effectively by water-based fluids because clay or other substances in the rock absorb water. For these formations, complex mixtures with a multitude of chemical additives may be used to thicken or thin the fluids, improve the flow of the fluid, or even kill bacteria that can reduce fracturing performance.

The committee analysis also indicates that a congressional report stated that between 2005 and 2009, oil and gas companies throughout the United States used hydraulic fracturing products containing 29 chemicals that are: 1) known or possible human carcinogens; 2) regulated under the Safe Drinking Water Act for their risk to human health; or 3) listed as hazardous air pollutants under the Clean Air Act. In some cases, companies injected fluids containing chemicals that they themselves could not identify.

They did not have access to the proprietary information about products purchased "off the shelf" from chemical suppliers.

The volume of fluid needed for hydraulic fracturing varies by site and type of formation. The U.S. Environmental Protection Agency (EPA) has reported that two to five million gallons of fracturing fluids may be necessary to fracture one well in a shale formation. The California Energy Commission reports that in the development of an entire field, the amount of water injected into a shale formation could reach into the hundreds of millions of gallons. When the injection fluid mixes with the shale, it may become contaminated with radioactivity in the ground while growing increasingly brackish. The fluid is brought back to the surface. The wastewater is then either recycled or disposed of.

Although some fracturing fluids are removed from the well at the end of the fracturing process, the Assembly Committee analysis indicates that a significant amount remains underground. Estimates of the fluids recovered range from 15 to 80 percent of the volume injected depending on the site. Migration of these fluids is not entirely predictable and many concerns have been raised about the fluids contaminating nearby groundwater. There is disagreement over how deep in the ground fracturing fluids are injected, with the range being from 9,000 feet below ground level or even depths less than 1,000 feet. Some companies even reported operating wells in shallower formations that meet the Federal Safe Drinking Water Act definition of drinking water.

Recent news events have brought to light the use of hydraulic fracturing in underground shale formations for oil and gas development. In a May 9, 2011 Associated Press article by Dina Cappiello titled *"Methane in water near gas drilling sites, study finds,"* it indicates that "new research is providing some of the first scientific evidence that a controversial gas drilling technique can contaminate drinking water." In Pennsylvania, there was a report of tens of thousands of gallons of toxic fracturing fluid that leaked onto residential property, killing trees and contaminating water. In addition, the U.S. EPA has reported that two water wells in Texas were contaminated by gas from hydraulic fracturing. Furthermore, the investigative news website ProPublica, which Congress relies on for information on hydraulic fracturing, found over 1,000 reports of water contamination near drilling sites.

In response to the controversy surrounding hydraulic fracturing, several states, local governments and even Quebec, Canada have imposed moratoriums on hydraulic fracturing and/or are requiring disclosure of fracturing fluid information. Many other states have introduced hydraulic fracturing related legislation this year.

AB 591 (Wieckowski)

As amended on May 10, 2011, AB 591 would require the application of intent to begin drilling to include all of the following: 1) the type of exploration and production techniques that the operator will use at the well(s); 2) information regarding the chemicals that the operator intends to bring onsite for injecting into the well for hydraulic fracturing or other production enhancement methods in the exploration or production process; and 3) the location of any known seismic faults within five miles of the well.

After drilling has commenced, the bill would require the operator to submit a list of chemicals used which would be required to be posted on the DOGGR's website. Specific information required includes: 1) the name of the chemical; 2) the purpose of the chemical; 3) the Chemical Abstract Service numbers for the chemical; 4) the estimated total amount of the chemical to be used; 5) the actual rate or concentration of each chemical used, expressed as pounds per thousand gallons or gallons per thousand gallons and expressed as a percentage by volume of the total hydraulic fracturing fluid or other injected fluid used; 6) the amount and source of water used in the exploration or production from the well; and 7) any radiological components or tracers to be injected into the well and a description of the recovery method for those elements or tracers, the expected recovery rate, and disposal method for recovered components or tracers.

In addition, AB 591 would require the operator to notify every property owner and occupant of property within one mile of a well if the listed chemicals include a chemical known to cause cancer or reproductive toxicity. If the information provided in the application to drill changes during the course of the exploration and production process, the operator is required to immediately notify the DOGGR. AB 591 would also require the DOGGR to collect information and prepare maps regarding oil and gas wells and the location and extent of groundwater and surface water for irrigation, domestic, industrial, or wildlife purposes that might be affected and include this information on its internet website. The hydraulic fracturing information required by AB 591 is intended to be used in the future to develop legislation and/or regulations to reasonably and effectively regulate hydraulic fracturing.

AB 591 is supported by California Coastal Protection Network, California Water Association, Clean Water Action, Environment California, Planning and Conservation League, and Sierra Club California. It is opposed by American Chemistry Council, California Independent Petroleum Association, and Western States Petroleum Association. This measure passed the Assembly Natural Resources Committee on April 25, 2011, as amended, by a vote of 6 to 3. It is currently set for a hearing in the Assembly Appropriations Committee on May 18, 2011.

County Impact

Beaches and Harbors

The Department of Beaches and Harbors (DBH) indicates that AB 591 would not have a direct impact on the department. According to DBH, there are various active or inactive wells (gas and oil) in or close to its operation area. However, a limited research of the literature readily available found that its operation area is not located on top of rock (shale) that lends itself to hydraulic fracturing.

Internal Services

According to the Internal Services Department (ISD), AB 591 is necessary to protect the State's water quality, to minimize the injection of known, or probable carcinogens into the water table aquifer, and to minimize the large volumes of contaminated and potentially untreatable waste water through the process known as hydraulic fracturing. AB 591 requires the collection of data by DOGGR and the web posting of this data before an application to drill is approved. ISD indicates that this will make well operators, their processes, and their use of materials more transparent prior to approval of their application to drill. ISD recommends that the County support AB 591.

Public Health

The Department of Public Health (DPH) indicates that hydraulic fracturing presents a potential threat to public health with regard to potential contamination of groundwater with unknown chemicals and radioactive tracer elements as well as the disposal of recovered hydraulic fluids. Although AB 591 is intended to introduce more transparency on the part of drilling operators as the identity of these chemicals and fracturing procedures are often proprietary industrial secrets, DPH states that the bill does not appropriately address public health risks.

According to DPH, support for AB 591 should be contingent upon it being amended to include a requirement for full risk assessments to be prepared by the drilling operators in the interest of proving the safety of their operations. Each plan for drilling submitted to DOGGR should include a comprehensive assessment on the potential impact of drilling procedures on public health, including modeling of potential contamination of water resources by the chemicals for which AB 591 requires disclosure.

This proposed comprehensive assessment on the potential impact of drilling procedures on public health should also include analyses of regional impacts on noise, air quality, seismic risks and carbon emissions that may result from hydraulic fracturing activity. In

addition, DPH indicates that each plan should include a full delineation of disposal procedures for recovered hydraulic fluids and allow DOGGR sufficient time for it to review the comprehensive assessment, including appropriate time for public comment and mitigation measures.

Because of the concerns cited above, DPH recommends that the County support AB 591, if amended, as indicated above.

Public Works

The Department of Public Works (DPW) indicates that AB 591 would establish statutory and regulatory protections against potential groundwater contamination caused by the hydraulic fracturing process. The oil production industry in Los Angeles County is anticipated to be active for years to come with projected expansion of its activities. Many of the active drilling operations and proposed new operations are in relative proximity to local groundwater resources that provide a drinking water supply for millions of the County's residents. Therefore, DPW recommends that the County support AB 591.

Board Policy

In 2006, your Board voted to oppose H.R. 4761, the Deep Ocean Energy Resources Act, which would have eliminated the ban on off-shore drilling in California. In addition, the County has numerous environmental policies in both the State and Federal Legislative Agendas that are generally supportive of environmental protection from hazardous chemicals, but none specifically related to oil and gas extraction connected with hydraulic fracturing.

Therefore, because there is no existing Board policy to support disclosure of the types of chemicals injected underground during oil and gas extraction related to hydraulic fracturing, support for AB 591 is a matter for Board policy determination.

WTF:RA
EW:sb

c: Executive Office, Board of Supervisors
County Counsel